



MISSOURI DEPARTMENT OF NATURAL RESOURCES
Division of Geology and Land Survey

Comments and Responses for the proposed Solid Waste Rule, Appendix, and Regulatory Impact Report documents

1. Comment:

- A. The six main conditions that are considered unsuitable for development of a solid waste disposal area seem mostly appropriate. I recommend that the wording used to describe these "fatal flaws" be improved slightly to reduce legal issues.

For example, condition III Permeable geologic media, including soil or bedrock with karst terrane features, faults, joints, fractures, or voids, that provide a pathway for the migration of landfill-derived gases outside the site. Taken literally, condition III could apply to nearly any property in the state. Soil or rock that has a very low permeability is still permeable. Mostly all soil and bedrock have some voids, joints, or fractures due to the nature of porous media. Attorneys could argue the literal meaning as III is written.

- B. Should the above be written as ...karst terrane features, karst terrane faults, karst terrane joints, karst terrane fractures, or karst terrane voids or is it understood that karst terrane applies to all of these, none of these, or just karst terrane features? This should be clarified.

1. Response:

- A. "Permeable geologic media" is defined as part of the proposed rule and will be found in 10 CSR 80-2.010 – Definitions. The definition states: "Permeable geologic media means soil or lithified earth material that has a hydraulic conductivity of greater than 1.0×10^{-6} centimeters per second (cm/sec), as determined by in-situ aquifer tests, packer tests or other methods approved by the department's geological survey program." The emphasis will be that these features must be present and also provide a direct connection to the uppermost regional aquifer to evoke disapproval. The intention of the rule is to exclude sites that could easily contaminate a regionally important water supply.
- B. The term karst terrane features applies to karst terranes only and is intended to reflect those features described in 10 CSR 80-2.010 - Definitions. The definition states: "Karst terranes means areas where karst, with its characteristic surface and subsurface features, is developed as the result of dissolution of limestone, dolomite or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, losing streams, caves, solution channels or conduits, springs and solution valleys." Geologic faults, joints, and fractures are distinct features. Voids could be related to karst development or other geologic conditions.

2. Comment:

- A. Under condition II, the term "rapid migration" is used twice. "Rapid migration" is a subjective term that could be the source of a legal argument. In the second part of II, "... or the rapid migration of groundwater from the site to a surface water body outside of the site", it seems difficult to call this an unsuitable condition without having detailed site specific data to support it. For example, in a floodplain setting with relatively permeable

granular soils, there may be a low hydraulic gradient that inhibits "rapid migration". It will be difficult to make an assessment of the rapid migration of groundwater from the site to a surface water body outside of the site without detailed site specific data.

- B. Again, should condition II above be written as ...karst terrane features, karst terrane faults, karst terrane joints, karst terrane fractures, or karst terrane voids or is it understood that karst terrane applies to all of these, none of these, or just karst terrane features?

2. Response:

- A. "Rapid migration" is defined as part of the proposed rule and will be found in 10 CSR 80-2.010 – Definitions. The definition states: "Rapid migration means the movement of fluids in excess of 10 feet per year as determined by: tracer tests, age dating, in-situ aquifer testing, packer tests or other methods as approved by the geological survey program." The department agrees that there could be circumstances when detailed, site-specific data would be required in order to determine if unsuitable site conditions exist. The rule contains provisions that allow a site to move to the detailed site investigation process if there is insufficient data to allow determination of site suitability during the preliminary site investigation process.

- B. See response to 1.B.

3. Comment:

- A. Is condition V an overlap or redundant for what is indicated in condition II? Does condition II cover condition V? Karst terrane is unsuitable and groundwater can not be effectively monitored in karst terrane (MDNR's position).

3. Response:

- A. During the stakeholder process, it was determined that features that provide a direct connection to the uppermost regional aquifer and sites that cannot be effectively monitored were distinct and separate site conditions. Groundwater that cannot be effectively monitored in *any* setting (regardless of whether karst terrane conditions exist or not) would render a site unsuitable.

4. Comment:

- A. Condition VI is difficult to conclude without detailed site specific data and analysis. For example, in mined areas, there may be a potential for mine collapse but the collapse does not propagate to cause a significant effect on the facility. "....Significant potential for catastrophic collapse" implies that some detailed analysis is needed before this statement can be justified.

4. Response:

- A. The department agrees that there could be circumstances when detailed, site-specific data would be required in order to determine if unsuitable site conditions exist. The rule contains provisions that allow a site to move to the detailed site investigation process if there is insufficient data to allow determination on site suitability during the preliminary site investigation process.